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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

**In re Application of:**

Dinerstein et al.

**Serial No.:** 10/084,609

**Filed:** February 27, 2002

**For:** METHOD AND SYSTEM FOR  
IMPROVED DIAMOND MOTION SEARCH

**Examiner:** Unknown

**Group Art Unit:** Unknown

**Attorney Docket No.:** 5178US

CERTIFICATE OF MAILING

I hereby certify that this correspondence along with any attachments referred to or identified as being attached or enclosed is being deposited with the United States Postal Service as FIRST Class Mail (under 37 C.F.R. § 1.8(a)) on the date of deposit shown below, with sufficient postage and in an envelope addressed to the Commissioner for Patents, Washington, D.C. 20231.

April 23, 2002  
Date of Deposit

  
Signature of registered practitioner or other person having reasonable basis to expect mailing to occur on date of deposit shown pursuant to 37 C.F.R. § 1.8(a)(1)(ii)

Paul C. Oestreich  
Typed/printed name of person whose signature is contained above

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents  
Washington, D.C. 20231

Sir:

In compliance with the duty to disclose information material to patentability pursuant to 37 C.F.R. § 1.56, it is respectfully requested that this Information Disclosure Statement be entered and the documents listed on attached Form PTO-1449 be considered by the Examiner and made of record. Copies of the listed documents are enclosed pursuant to 37 C.F.R. § 1.98(a).

In accordance with 37 C.F.R. § 1.97(g) and (h), filing of this Information Disclosure Statement is not to be construed as a representation that a search has been made or an admission that the information cited herein is, or is considered to be, material to patentability as defined in 37 C.F.R. § 1.56(b). Further, no representation is made by Applicant herein that no other possible material information as defined in 37 C.F.R. § 1.56(b) exists.

DOCUMENTSU.S. Patent Documents

<u>U.S. Patent No.</u>	<u>Issue Date</u>	<u>Inventor</u>
5,021,891	06/04/1991	Lee
5,107,345	04/21/1992	Lee
5,452,104	09/19/1995	Lee
5,844,613	12/01/1998	Chaddha
5,956,431	09/21/1999	Iourcha et al.
5,999,655	12/07/1999	Kalker et al.
6,031,937	02/29/2000	Graffagnino
6,084,908	07/04/2000	Chiang et al.
6,233,017 B1	05/15/2001	Chaddha
6,246,719 B1	06/12/2001	Agarwal
6,272,178 B1	08/07/2001	Niewegowski et al.

Other Documents

H26L Specification, "ITU-Telecommunications Standardization Sector", pps. 1-46, Study Group 16, Video Coding Experts Group, dated June 28, 2001.

H26L Specification, "ITU-Telecommunications Standardization Sector", pps. 1-25, Study Group 16, Video Coding Experts Group, dated May 5, 2000.

Zhu et al., "A New Diamond Search Algorithm for Fast Block-Matching Motion Estimation," pps. 287-290, IEEE Transactions on Image Processing, Vol 9, No.2, dated February 2000.

Shin et al., "A Center-Based Hybrid Search Method Using Plus Search Pattern for Block Motion Estimation," pps. 309-312, IEEE International Symposium on Circuits and Systems, dated May 23-31, 2000.

Tourapis et al., "Optimizing the MPEG-4 Encoder - Advanced Diamond Zonal Search," pps. 674-677, IEEE International Symposium on Circuits and Systems, May 28-31, 2000.

MPEG-4 Diamond Search Specification, "Coding of Moving Pictures and Audio", 9 pps., draft of March 25, 2000.

Applicants offer to supply any explanation or discussion of the documents that the Examiner feels is necessary or desirable and which is requested.

This Information Disclosure Statement is filed within three (3) months of the filing date of the above-identified application, and no certification pursuant to 37 C.F.R. § 1.97(c) or a fee pursuant to 37 C.F.R. 1.17(p) is required.

Respectfully submitted,



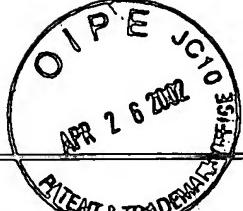
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Date: April 23, 2002

PCO/hlg:dn

Enclosures: Form PTO-1449  
Copy of documents cited

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Form PTO-1449

INFORMATION DISCLOSURE CITATION  
IN AN APPLICATION

(Use several sheets if necessary)

Docket Number (Optional)  
**2792-5178US**Application Number  
**10/084,609**Applicants **Dinerstein et al.**Filing Date **February 27, 2002**Group Art Unit **Unknown**

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	5,021,891	06/04/1991	Lee			
	5,107,345	04/21/1992	Lee			
	5,452,104	09/19/1995	Lee			
	5,844,613	12/01/1998	Chaddha			
	5,956,431	09/21/1999	Iourcha et al.			
	5,999,655	12/07/1999	Kalker et al.			
	6,031,937	02/29/2000	Graffagnino			
	6,084,908	07/04/2000	Chiang et al.			
	6,233,017 B1	05/15/2001	Chaddha			
	6,246,719 B1	06/12/2001	Agarwal			
	6,272,178 B1	08/07/2001	Nieweglowski et al.			

## FOREIGN PATENT DOCUMENTS

DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation	
					YES	NO

## OTHER DOCUMENTS

(Including Author, Title, Date, Pertinent Pages, Etc.)

	H26L Specification, "ITU-Telecommunications Standardization Sector", pps. 1-46, Study Group 16, Video Coding Experts Group, dated June 28, 2001.
	H26L Specification, "ITU-Telecommunications Standardization Sector", pps. 1-25, Study Group 16, Video Coding Experts Group, dated May 5, 2000.
	Zhu et al., "A New Diamond Search Algorithm for Fast Block-Matching Motion Estimation," pps. 287-290, <u>IEEE Transactions on Image Processing</u> , Vol 9, No.2, dated February 2000.
	Shin et al., "A Center-Based Hybrid Search Method Using Plus Search Pattern for Block Motion Estimation," pps. 309-312, <u>IEEE International Symposium on Circuits and Systems</u> , dated May 23-31, 2000.

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.



(2-92)

Sheet 2 of 2